What is claimed is:

1. A network device capable of upgrading software through a network, comprising:

monitoring means for monitoring at least one failure while the software is being upgraded;

a first memory for storing data necessary for operating the network device;

a second memory for storing information transferred through the network;

a controller for performing control to store the information, which is downloaded through the network to upgrade the software, in the second memory, and store an old version of the software in an empty area of the first memory before the old version of the software stored in the first memory is upgraded with the information stored in the second memory; and

a decoder for selecting either the first memory or the second memory, which is used for upgrading the software, according to a control signal received from the controller and a result of monitoring received from the monitoring means, and setting an address.

2. The network device of claim 1, wherein the controller provides a control signal to the decoder to copy the old version of the software to the empty area of the first memory, erase the old version of

the software stored in an original area of the first memory, and copy the information stored in the second memory to the original area of the first memory.

3. The network device of claim 1, wherein the monitoring means monitors whether at least one failure occurs in a network device such as a power failure or hang-up of the network device.

4. The network device of claim 1, wherein the monitoring means monitors whether at least one failure occurs in the network.

5. The network device of claim 1, wherein when the decoder receives a signal, indicating that at least one failure has occurred, from the monitoring means while the software is being upgraded, the decoder returns to the initial state of the network device.

6. The network device of claim 5, wherein when at least one failure occurs while the old version of the software is being upgraded, after the old version of the software is copied to the empty area of the first memory, the decoder operates so that the network device can be restarted based on the old version of the software.

7. A network device capable of upgrading software through a network, comprising:

monitoring means for monitoring whether at least one failure occurs while the software is being upgraded;

a first memory for storing first data necessary for operating the network device;

a second memory for storing second data necessary for operating the network device;

a third memory for storing information transferred through the network;

a controller for performing control to store information, which is downloaded through the network to upgrade the software, in the third memory, and store a copy of an old version of the software in an empty area of the second memory before the old version of the software stored in the first memory is upgraded to the information stored in the third memory; and

a decoder for selecting one of the first memory, the second memory, and the third memory, which is used for upgrading the software, according to a control signal received from the controller and the result of monitoring received from the monitoring means, and setting an address.

8. A method for upgrading software of a network device through a network, the method comprising the steps of:

upgrading the software through the network and checking whether at least one failure occurs during the upgrade;

when it is determined that at least one failure has occurred, operating the network device based on an old version of the software used before the upgrade was performed; and

when it is determined that at least one failure has not occurred, operating the network device based on a new version of the software to which the old version was upgraded.

9. The method of claim 8, wherein the upgrading of the software comprises the steps of:

downloading the new version of the software through the network;

copying the old version of the software stored in a first area of the network device to a second area of the network device;

erasing the old version of the software from the first area of the network device; and

storing the new version of the software in the first area of the network device.

10. The method of claim 9, wherein the at least one failure is a failure in the network device which is checked during the erasing and storing steps.

11. The method of claim 8, wherein the at least one failure comprises a power failure in the network device or hang-up of the network device.

12. The method of claim 8, wherein the at least one failure comprises a network failure.

13. The method of claim 11, wherein the at least one failure comprises a network failure.